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ABSTRACT

To provide administrators and teachers with a set of essential elements and principles to consider in using inservice programs for school improvement, this document presents a model comprised of 27 dimensions identified as important elements of effective inservice programs. These dimensions were identified through a review of the research literature on basic skills instruction at the elementary school level. (Appendix A briefly reviews the sources providing this research.) A second literature review identified four inservice experiments that used these dimensions to improve students' basic skills achievement. (Appendix B briefly describes these experiments.) Following a foreword and introduction, a table summarizes the findings concerning these dimensions--listing each element, the effective practice associated with each element, and the research validating the effectiveness of these practices. The four types of research used include basic skills experiments, implementation research, inservice research, and survey research. The bulk of the document expands on these aspects of each dimension, with the dimensions divided into the following six categories: teacher objectives, student objectives, delivery systems, organizational context, governance, and selection and evaluation. To illustrate how theory is transferred into practice, case studies of three successful school district staff development programs are provided. A bibliography lists 56 references. (DCS)

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# Effective Staff Development for Teachers

## A Research-Based Model

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Meredith D. Gall and Ronald S. Renchler
in collaboration with Fay B. Haisley, Robert G. Baker, and Migbe Perez

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Clearinghouse on Educational Management
College of Education, University of Oregon

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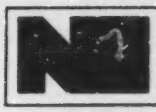

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# Contents


| | |
|---|---|
| **Foreword** | vii |
| **Introduction** | 1 |
| **A. Teacher Objectives** | 6 |
| 1. Target Competencies | 6 |
| 2. Operationalization | 7 |
| 3. Complexity | 8 |
| 4. Expected Level of Performance | 8 |
| **B. Student Objectives** | 10 |
| 5. Target Objectives | 10 |
| 6. Expected Level of Achievement | 11 |
| **C. Delivery System** | 13 |
| 7. Readiness Activities | 13 |
| 8. Instructional Process | 14 |
| 9. Maintenance and Monitoring | 15 |
| 10. Training Site | 16 |
| 11. Trainers | 17 |
| 12. Scheduling | 17 |
| **D. Organizational Context** | 19 |
| 13. Purpose for Participation | 19 |
| 14. Inservice Cohorts | 20 |
| 15. Concurrent Organizational Changes | 21 |
| 16. Other Inservice Activities | 22 |
| **E. Governance** | 24 |
| 17. Governance Structure | 24 |
| 18. Teacher Participation in Governance | 25 |
| 19. Recruitment of Participants | 25 |
| 20. Incentives | 26 |
| 21. Sanctions | 26 |
| 22. Costs | 26 |

F. Selection and Evaluation 28

23. Policy 29
24. Needs Assessment 30
25. Relevance to Participants 30
26. Measurement of Teacher Competence 31
27. Measurement of Student Objectives 32

Case Studies 34

1. Whittier Union High School District 35
2. San Diego Unified School District 37
3. Redwood City Elementary School District 38

Appendices 41

A. Review of Research on Basic Skills Instruction at the Elementary School Level 41
B. Verification of the Dimensions by Four Inservice Experiments 42

Bibliography 44

Interviews 50

# Foreword

At a time when teachers, administrators, and local and state policy-makers are taking concerted steps to improve school effectiveness, the quality of staff development programs for teachers is a logical concern. At a time also of limited funding for schools, those who design and implement staff development programs want to make sure that the resources allocated to those programs achieve the results intended.

What practices distinguish effective staff development programs for teachers from those shown to be less effective? When school districts design and implement staff development programs, do they actually use practices that have been proved effective?

In 1982, a team of researchers from the Center for Educational Policy and Management at the University of Oregon sought answers to these two questions. The team first examined the research literature to identify effective inservice practices. A practice was considered effective if it could be shown to have at least one of three results: teachers incorporated the content learned from the staff development program in their classroom instruction, teachers and administrators were satisfied with the program, and students improved their achievement in the basic skills. In a second stage, the team surveyed teachers and administrators to see whether actual inservice programs utilize these research-validated practices.

The results were disquieting. Most of the staff development programs bore little resemblance to the list of effective practices that emerged from the literature review. For example, according to the research, the most effective programs are designed for the purpose of school improvement. But in actual practice, the survey showed that 67 percent of staff development activities are for teachers' personal professional improvement. The activities also paid little attention to student achievement as a desired outcome, pursued many goals instead of a few priority ones, and neglected direct instruction strategies. All these characteristics are contrary to the recommendations emanating from research on effective staff development programs.

A primary mission of the ERIC Clearinghouse on Educational Management is the dissemination of research

findings in formats that facilitate their implementation in schools. Accordingly, the Clearinghouse is pleased to publish this monograph on effective staff development programs. The main portion of this monograph is a revised and updated version of the literature review mentioned above. We thank the Center for Educational Policy and Management for giving us permission to use this material, originally published in The Relationship Between Inservice Education Practices and Effectiveness of Basic Skills Instruction, by Meredith D. Gall, Fay B. Haisley, Robert G. Baker, and Miguel Perez (197 pages, December 1982). Copies of this report are still available from CEPM for $5.00 each; it is also available from EDRS (ED 228 745) in paper copy ($16.15) and microfiche ($0.97).

The research review has been brought up to date to include several studies made available since the original report was published. Another change is the addition of case studies of exemplary school district staff development programs.

Meredith D. Gall codirected CEPM's research project and wrote the original report. He is professor of education in the Division of Teacher Education, College of Education, University of Oregon, and is a research associate in the Center for Educational Policy and Management. His areas of specialization include instructional design, performance-based teacher training, and the effects of teaching. His most recent research involved an NIE-funded project that examined principals' participation in teachers' staff development.

Ronald S. Renchler is a freelance research analyst and writer who was employed by the Clearinghouse to revise the literature review, in collaboration with Gall, and to write the case studies.

At the time of the project, Fay B. Haisley was associate dean for teacher education in the College of Education, University of Oregon. As project codirector, she contributed to the design of the research, recruited sites and personnel, and provided administrative support. Haisley is currently dean of the School of Education, University of the Pacific.

Robert G. Baker and Miguel Perez, at the time of the project, were doctoral students who assisted in data collection and analysis, among other duties.

Stuart C. Smith
Director of Publications

# Introduction

One result of staff development programs for teachers should be an improvement in the quality of their classroom instruction. But the path leading from the design and implementation of inservice programs to improved teaching skills to better performance by students often seems to wind through a wilderness. Unfortunately, few established signposts are available along the way to provide guidance. It is understandable, therefore, when those involved with inservice programs become lost while trying to find a clearly marked thoroughfare leading to school improvement.

Perhaps we need a map. Even though we might occasionally become lost, with a map we can retrace our steps and find out where we took a wrong turn. We can begin our map-making by first identifying the numerous elements that are involved in designing and implementing an effective inservice program.

No one yet pretends to have discovered all the elements that make staff development programs completely successful. We hope, however, that the map, or model, presented in this Digest will provide administrators and teachers with a set of essential elements and principles to consider in using inservice programs for school improvement.

There are, of course, many purposes for staff development. Among them are the professional and personal development of teachers; specific teaching methods; special skills for teaching handicapped and gifted students; curriculum implementation; and basic skills programs. Because much attention has been given recently to improving students' basic skills, the model presented here is based on that purpose. It should be apparent, however, that, with only minor alterations, the dimensions and practices identified as important for successful basic skills inservice programs should be applicable to virtually any type of inservice purpose.

Our model comprises 27 dimensions that we identified as important elements of effective inservice programs. We used a review of the research literature on basic skills instruction at the elementary school level to derive a set of generic dimensions for characterizing inservice programs. A summary of this literature review is given in Appendix A.

A second literature review focused on reports on the effectiveness of inservice programs that used practices corresponding to the dimensions in our model. From this review, we identified four inservice experiments that led to an improvement in students' basic skills achievement. These experiments are referred to collectively throughout this report as "the four inservice experiments." Appendix B describes the four inservice experiments.

The 27 dimensions, the effective practices associated with each dimension, and the research basis for validating their effectiveness are described in table 1. The first column of the table lists the dimensions and the six categories under which they are organized. The second column lists an effective inservice practice associated with each dimension. In a few cases, an effective practice could not be identified. The third column identifies the type of research from which the effective practice was derived. Individuals who design, implement, and evaluate inservice programs can use the table to compare their own inservice practices with the given standards.

The chapters that follow provide a full description of each dimension, a discussion of effective practices associated with the dimension, and a brief review of the research that validates the effectiveness of the relevant practices. Finally, the successful staff development programs of three school districts illustrate how theory is transferred into practice.

# Table 1 Summary of Research on Effective Inservice Practices

| *Dimension* | *Effective Practice* | *Basis* |
|---|---|---|
| **A. Teacher Objectives** | | |
| 1. Target competencies | Teachers should use instructional methods validated by research. | Basic skills experiments |
| 2. Operationalization | Inservice program should have operationally stated objectives for teacher behavior. | Implementation research |
| 3. Complexity | If the skills to be learned are complex, introduce them into the teacher's repertoire gradually. | Implementation research; inservice research |
| 4. Expected level of performance | Teachers should be told specifically how much to use particular instructional behaviors. | Basic skills experiments; implementation research |
| **B. Student Objectives** | | |
| 5. Target objectives | Inservice program should have as its ultimate goal improved student performance. | Basic skills experiments |
| 6. Expected level of achievement | Teachers should be helped to believe that students' academic performance can be improved. | Basic skills experiments; teacher expectations research |
| **C. Delivery System** | | |
| 7. Readiness activities | Hold meetings that deal with teachers' concerns about the inservice program and that build consensus to participate in it. | Implementation research |
| 8. Instructional process | Teachers should be given manuals describing the methods covered in the inservice program; should discuss the methods in group meetings with a trainer; and should receive observation and feedback on their skill performance. | Basic skills experiments; inservice research |
| 9. Maintenance and monitoring | Inservice program should have followup component to maintain and monitor gains made on initial training. | Implementation research |

| | | |
|---|---|---|
| 10. Training site | Inservice program should use the teacher's own classroom as a training site at least part of the time. | Basic skills experiments; inservice research |
| 11. Trainers | The trainer should have credibility in the eyes of teachers. | Inservice research |
| 12. Scheduling | Schedule inservice sessions at times that do not interfere with teachers' other obligations. | Inservice research |
| **D. Organizational Context** | | |
| 13. Purpose for participation | Inservice program should focus on school improvement rather than on personal professional development. | Inservice research |
| 14. Inservice cohorts | Inservice program should provide activities that allow teachers to work with and learn from each other. | Survey research |
| 15. Concurrent organizational changes | Principal should participate in and support the teachers' inservice activities. | Implementation research; research on principals' behavior |
| 16. Other inservice activities | None identified. | |
| **E. Governance** | | |
| 17. Governance structure | None identified. | |
| 18. Teacher participation in governance | Teachers should have the opportunity to help plan the inservice program. | Survey |
| 19. Recruitment of participants | Participation should be mandatory in order to bring about schoolwide improvement. | Inservice research |
| 20. Incentives | Provide incentives like released time, expenses, college or district credits approval by school principal. | Survey research; implementation research |
| 21. Sanctions | None identified. | |
| 22. Costs | None identified. | |

**F. Selection and Evaluation**

| | | |
|---|---|---|
| 23. Policy | Inservice program should be selected because of its demonstrated effectiveness in improving students' academic performance. | Basic skills experiments |
| 24. Needs assessment | Inservice program should be targeted to areas of student performance demonstrated to be in need of improvement. | |
| 25. Relevance to participants | Content of the inservice program should be relevant to the teacher's classroom situation. | Survey |
| 26. Measurement of teacher competence | Teachers' classroom performance should be assessed to determine their implementation of inservice content. | |
| 27. Measurement of student objectives | Inservice program effectiveness should be assessed by student performance on relevant measures and in such a way that teachers do not feel threatened. | Research on achievement testing |

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Notes

1. In most cases the effective practices listed are a direct statement of a finding from one or more research studies. In a few cases the effective practice is a reasonable inference from research findings.

2. The types of research listed in the third column are as follows:
   **Basic skills experiments.** These are the four inservice experiments (see Appendix B) by Anderson and others; Gage and others; Stallings; and Good and Grouws.
   **Implementation research.** These are studies, mostly descriptive and correlational, in which the criterion was how well a curriculum or instructional method was implemented in a natural school setting.
   **Inservice research.** These are experiments in which effects of different inservice practices on teacher competence were assessed.
   **Survey research.** These are descriptive studies of teacher preferences and attitudes concerning particular inservice practices.
   **Other research.** Some studies relating to teacher expectations, school principals, and achievement tests are relevant to several of the inservice dimensions.

# A Teacher Objectives

Inservice education is usually defined as a change in teacher ability brought about by new learning. Joyce and his colleagues (1976) defined inservice education as "formal and informal provisions for the improvement of educators as people, educated persons, and professionals, as well as in terms of the competence to carry out their assigned roles" (p. 6). Inservice education attempts to improve teacher capacity in three broad areas: knowledge, attitudes, and skills. Thus, we define inservice teacher education as efforts to improve teachers' capacity to function as effective professionals by having them learn new knowledge, attitudes, or skills. These outcomes constitute the teacher objectives of an inservice activity.

## 1 Target Competencies

Each of the four inservice experiments described in Appendix B emphasized teaching skills rather than knowledge and attitudes. These experiments sought to determine whether specific teaching behaviors can be linked to growth in students' basic skills achievement. It seems desirable, whenever possible, to select inservice programs whose content can be validated in this way, namely, by demonstrating the links between the teaching behaviors emphasized in the program and the criterion of student performance.

Roehler and Duffy (1981) suggested that the teaching skills validated in the four inservice experiments generally can be classified into two types: monitoring behavior, in which teachers ask pupils to perform a desired basic skill; and reactive-corrective behavior, in which students receive help when they fail to make a desired response. These two instructional strategies presumably are effective because they ensure a high engagement rate of students in academic tasks.

Two studies used an academic learning time (ALT) model as the teacher objectives of an inservice program. In a study by Helms (described by Rouk, 1981), the five key instructional variables were allocated time, engagement rate, student engaged time, students' prior learning, and

instructional overlap, that is, the match between instructional content and achievement test content. The last two of Helms' instructional variables are of particular interest because they require a change in teachers' curriculum content rather than in their instructional style. Hutchins' study (described by Saily, 1981) also tested the effectiveness of an inservice workshop for increasing ALT in schools.

Although evidence on teachers' ability and willingness to change their curriculum content is not yet available from Helms' and Hutchins' research, a study by Porter (1981) indicates that teachers are quite willing to change their curriculum content in response to such external influences as standardized tests, principals, other teachers, and parents.

The four inservice experiments measured teachers' use of the instructional skills that formed the target competencies. We should stay open to the possibility that other changes might result from inservice programs. For example, an inservice program may affect teachers' self-concepts or beliefs about education, even though those effects were not part of the formal objectives of the program. These effects on teachers may be immediate (side-effects) or may show up months or even years after training (long-term).

## 2 Operationalization

The research on curriculum implementation reviewed by Fullan and Pomfret (1977) and by Hall and Loucks (1980) indicates that the explicitness--or ability to be expressed in operational terms--of a curriculum or of inservice content has an effect on its implementation. Hall and Loucks concluded that "research and experience have shown that unclear expectations are one way to guarantee nonimplementation. Teachers appreciate clear objectives--they need to know what they are expected to do and how their roles are to change" (p. 16).

It is difficult to imagine how a teacher can acquire new instructional skills unless the skills are clearly made operational or explicit. Thus, one criterion of an effective inservice program is likely to be the extent to which its content is clearly operationalized. Unfortunately, Ogletree and Allen (1974) found that a majority of their sample of elementary teachers believed that the objectives of their inservice meetings were not clearly defined. A

characteristic of the four inservice experiments is that the teaching skills are stated at a relatively low inference level and are easily observable in a model teacher's performance.

## 3 Complexity

The complexity of a new curriculum or inservice program has an effect on its implementation. The complexity of teacher objectives in an inservice activity is probably a function of several factors, including the number of skills to be learned, whether the skills already exist to some degree in the teacher's repertoire, and the extent to which the skills must be adapted to classroom conditions. Hall and Loucks (1980) recommend that "when the innovation is complex,...major components should be phased in one or a few at a time" (p. 18). Gersten, Carnine, and Williams (1982) found that teachers in their sample needed to learn the skills of a complex direct instruction model in phases--several skills in each phase--over a relatively long period of time.

These findings suggest that if complex teacher objectives are delivered to teachers in just a few sessions, the inservice activity will have little effect on teachers' instructional behavior, and subsequently it will have little effect on students' academic achievement.

## 4 Expected Level of Performance

This dimension of teacher objectives is related to dimension 2 (operationalization), which refers to the explicitness of the teacher objectives. Expected level of performance refers to the specificity of criteria for determining whether the objectives have been met.

In skills-based inservice programs, teachers are expected to increase or decrease their use of particular instructional behaviors. The direction, but not the degree, of change is specified in most programs. An important feature of the four inservice experiments is that they suggest specific levels of use for some instructional behaviors. For instance, one of the recommendations in the program by Gage and colleagues is that "teachers should avoid

calling on volunteers more than 10 or 15 percent of the time during question-and-answer sessions" (1978, Appendix A, p. 4). In their study, Good and Grouws (1979) recommend that the teacher spend the first twenty minutes of a Monday math period conducting a review of skills and concepts covered during the previous week.

# B Student Objectives

Inservice activities have objectives at two levels. The immediate objective is to bring about an increase in teacher competence. The long-range objective is to bring about improvements in student performance as a result of the increase in teacher competence. In this section we discuss dimensions related to these long-term objectives of inservice education.

We are aware that the connections between improved teacher competence and improved student performance are complex. Sometimes, the connections may be explicit and experimentally validated, as in the case of the training programs used in the four inservice experiments. We suspect, however, that in many inservice activities the connections between teacher objectives and student performance gains are vague and unverified. Weick (1976), among others, has commented on the prevalence of loose coupling in school organizations. One manifestation of loose coupling is that staff developers often design inservice activities without communicating with other school educators who are responsible for monitoring and improving student performance.

## 5 Target Objectives

Educators are well aware that in recent years public criticism of the schools has focused on the failure of many students to acquire basic skills in reading and math. A report by Schalock (1977) on the status of professional development in Oregon stated that there "is an increasing demand for schools in Oregon, as there is throughout the nation, to provide better preparation in the basic skills of reading, writing, and computation" (p. 1). We might expect, then, that a high proportion of inservice activities are concerned with basic skills objectives. However, the only study we could locate with pertinent data indicated that just the opposite is true. In this study, Sullivan (1981) found that only 10 percent of the New York City Schools inservice programs were related to reading and math instruction.

Research on teacher preferences and values suggests that basic skills development would not be a high inservice

priority for teachers. Schurr and his colleagues (1980) discovered that teachers prefer inservice topics that concern student motivation and attitudes. Research by Prowat and Anderson (1981) indicated that elementary teachers consider their most important task to be attending to students' affective needs: When teachers were asked about their priorities, they "made twice as many statements about things they did to promote affective growth (for example, getting students to interact positively or feel good about themselves) as compared to cognitive growth" (p. 1). Similarly, a study by Harootunian and Yarger (1981) suggested that most teachers judge their success by the degree to which they involve their students affectively in instruction. These results indicate that, when given a choice, teachers would opt for inservice objectives having an affective theme rather than a basic skills emphasis.

Target objectives for students are a very important dimension of inservice education. Cawelti (1981) observed that support for inservice education ultimately rests on its demonstrated connection to "objective productivity criteria," such as basic skills achievement. Critics of the federally funded Teacher Centers claimed that such centers should not be supported because they served the needs of teachers rather than the needs of students.

Some inservice programs may seek to train teachers with the expectation that change in teacher competence will produce direct changes in student performance. There may be additional expectations that these changes in student performance will lead to other changes in students, either concurrently or over a longer period. For example, some educators believe that if student self-concept is improved (direct effect), there will be subsequent improvement in student academic achievement (side effect). Another example is provided by inservice programs designed to help teachers acquire skills for reducing student discipline problems in the classroom. It is conceivable that reduction of student discipline problems (direct effect) will lead immediately to more instructional time on task (side-effect).

## 6 Expected Level of Achievement

Brophy and Good (1974) provide ample research evidence that educators have expectations about students' achievement potential. We know little, however, about the relationship

between educator expectations for student achievement and educator support for inservice programs as a response to these expectations. It may be that decline in test scores over time within a school district is a more effective trigger for initiating a basic skills program than is the perception that students are performing below expectations.

In fact, there is some reason to believe that educators adjust expectations to match the realities of student achievement. For instance, in 1976 the California legislature enacted minimal competency requirements for high school graduation but allowed each district to make up its own test and set its own standards. Savage (1982) reported that "fewer than one percent of high school students were denied a diploma because of the test" (p. 251).

# C Delivery System

The delivery system of staff development programs refers to the process used to achieve teacher-level objectives, that is, gains in teachers' knowledge, skills, and attitudes. Traditional delivery systems include presentations by experts during a school district's inservice days; university coursework, which typically is in a lecture/demonstration/discussion format; and hands-on workshops. Another characteristic of traditional inservice delivery systems is that they usually are brief, "one-shot" experiences.

Now, however, educators are increasingly advocating multistage, longterm delivery systems that include both training and implementation strategies. The model developed by Pankratz and Martray (1981) proposes an eight-stage inservice/school improvement program that includes awareness building, skill training, implementation assistance, and monitoring and maintenance. In this section we review evidence that supports the effectiveness of these components in an inservice delivery system.

## 7 Readiness Activities

We use the term readiness activities to refer to the inservice experiences provided to teachers and administrators prior to the skill-training phase of a delivery system. Loucks and Pratt (1979) find evidence in their review of research suggesting that readiness activities have an important effect on how well inservice training is implemented.

The literature on inservice education suggests several activities that should be included in the readiness phase. For example, Pankratz and Martray (1981) identify the following activities as being helpful: developing an awareness of need among formal and informal school leaders, obtaining these leaders' agreement on a delivery system, and using exploratory workshops to provide information and to develop consensus.

Miller (1981) argues that teacher acceptance of personal

responsibility for student achievement is an important component of an effective school improvement program. This claim is supported by Berman and McLaughlin (1978), who found that teachers' beliefs about whether they could help students were correlated with the degree of new program implementation. Readiness activities might be conducted to help teachers raise their expectations of students and to improve teacher attitudes toward their own instructional efficacy.

The concerns-based approach to curriculum change developed by Loucks and Pratt (1979) also suggests several readiness activities that might be incorporated into an inservice delivery system. Their research indicated that teachers have three types of concerns prior to becoming involved in inservice training and curriculum implementation: absence of concern, concern to know more about the program, and concern about how its use will affect them. Loucks and Pratt describe a preinservice session that they developed to help teachers deal with the first two concerns in a particular curriculum implementation project.

## 8 Instructional Process

Instructional process refers to the methods used by inservice staff to train teachers in knowledge and skills or to modify their attitudes. Appendix B summarizes the instructional processes used in the four inservice experiments.

In our examination of commonalities in the four inservice experiments, we found that each of the inservice programs involved at least two meetings. (The "minimal" group in Gage's study did not attend any meetings, resulting in lower end-of-year achievement scores relative to the "maximal" group.) Another common feature across the studies was the use of brief manuals to describe the desired behaviors.

Teacher behavior was observed and critiqued in two of the four inservice experiments. Teachers in Stallings' experiment were observed in their classrooms and given both a qualitative and a quantitative summary of the results. Gage's "maximal" group of teachers was observed in role-playing exercises during meetings. Teacher behavior was observed in one of Anderson's trained groups, but the

summaries of observations were not shared with the teachers. The ongoing research of Helms and of Hutchins includes evaluation of observation and feedback components of inservice programs. The Lawrence and Harrison (1980) meta-analysis revealed that successful inservice programs tend to include a sequence in which participants try out new behaviors in their classrooms or in simulations and then receive feedback from a skilled person.

Overall, research suggests that teacher productivity in basic skills instruction can be increased by using a relatively simple instructional process. It should be noted, though, that none of the four inservice experiments extended over a period of more than a single school year. Also, the programs were not successful for all teachers. Instructional processes not used in the four experiments may produce more sustained effects, and effects for more teachers, than those used in the four inservice experiments. For example, the coaching procedure described by Joyce and Showers (1982) may significantly enhance the effectiveness of training manuals and meetings by promoting transfer of the instructional principles to the teacher trainee's particular classroom situation. We could locate no data, however, on how frequently coaching and related processes occur in practice.

## 9 Maintenance and Monitoring

Maintenance refers to the use of followup measures to help teachers preserve or increase gains made in initial training. Monitoring refers to the use of procedures for making continued observation of teachers' adherence to desired instructional strategies or of student performance.

Changes in teacher behavior as a result of training tend to revert to baseline levels over a certain period. Johnson and Sloat (1980) found reversions to baseline rate twelve months after completion of training. Borg (1973) found reversion three years after training. It appears, then, that monitoring and maintenance procedures are desirable if teacher productivity gains are to be preserved over a number of school years.

An important element of the four inservice experiments is that the project staffs maintained contact with the teachers over a duration of months by spacing training sessions and by collecting classroom data on teacher behavior and test data on student achievement. The continued

observations are like a monitoring process and thus may have cued teachers to reinstate desired instructional behaviors.

In Gage's experiment, a maintenance intervention was used several months after the initial five-week training period. Both the maximal and the minimal group received a refresher training manual. In addition, the teachers in the maximal group were videotaped and given feedback on their implementation of instructional principles.

One of the conclusions Fullan and Pomfret (1977) reached in their review of research was that "intensive in-service training (as distinct from single workshops or preservice training) is an important strategy for implementation" (p. 373). This particular conclusion was based primarily on the Rand studies of educational change conducted by Berman and McLaughlin (1978). It seems reasonable that "one-shot" inservice education will have less effect on teacher productivity than continous inservice education that includes monitoring and maintenance procedures.

Maintenance and monitoring activities do not appear to be features of current inservice practice. In the survey conducted by Betz and colleagues (1978), less than 20 percent of the teachers reported that their inservice meetings included followup activities. In an earlier survey, Ogletree and Allen (1974) found that a majority of urban teachers reported no followup or evaluation of their inservice meetings.

## 10 Training Site

We could locate no empirical data concerning teacher preference for training sites. The teachers' own classrooms were used as "training" sites in the four inservice experiments in that the teachers' behavior was observed in their classrooms to assess implementation of the desired instructional behaviors. In Stallings' study, these observational data were also used as personal feedback to the participating teachers.

In their meta-analysis, Lawrence and Harrison (1980) found that inservice programs tended to be more effective when conducted at the school site, but this generalization applies only to inservice programs that emphasized affective or skill performance objectives.

# 11 Trainers

Each of the four inservice experiments required one or more inservice trainers. Their roles generally did not require close, sustained involvement with the teachers. It is not known whether individual differences between inservice trainers would influence the effectiveness of the inservice programs used in these experiments.

Teachers surveyed by Betz and colleagues (1978) reported that they learned the most from other teachers. However, their ratings of college and university personnel and professional consultants were nearly as high. McDonald (1980) reviewed a series of British experiments on teacher induction programs and concluded that the most successful ones were those that made available to the beginning teacher an experienced teacher who could serve as a monitor, model, and counselor. McDonald questioned whether it was necessary for an experienced teacher to perform these roles, or whether others, such as a principal or university supervisor, could perform them.

# 12 Scheduling

We see at least three issues related to the scheduling of inservice activities: time of day or week for holding an inservice session, spacing of inservice sessions, and the time frame over which a particular inservice program is implemented.

With respect to the first issue, Betz and colleagues (1978) found that the teachers in their sample generally preferred inservice education to be scheduled during school hours. In practice, though, over half of the sample reported attending some inservice activities before and after school, and a fourth of the sample reported attending weekend inservice activities. The training sessions in the four inservice experiments were held at various times during the day or week, except for the collection of classroom observation data and student achievement tests.

The results of the Harrison and Lawrence (1980) meta-analysis do not support the teacher preferences

expressed in Betz's survey. Lawrence and Harrison found that effective inservice programs tended to be scheduled during the evenings and summers, when the activities did not compete with other professional duties of teachers. Inservice programs scheduled during work hours were considerably less successful in achieving objectives.

Sessions of a typical inservice program can be held together--for example, an intensive weekend workshop--or they can be spaced over a longer period. We could locate no research on teacher preferences for massed or spaced sessions. A possible advantage of spacing inservice sessions is that it would provide sustained contact between teachers and trainers, allow for spaced practice of new skills, and allow more time for teacher concerns to surface and be addressed.

The third scheduling issue is the time frame over which a particular inservice program is to be implemented. Loucks and Pratt (1979) emphasized the need for a substantial time frame: "Research indicates that three to five years are necessary to implement an innovation that is significantly different from current practice" (p. 213). Fullan and Pomfret (1977) also concluded that implementation of innovations, with concurrent inservice support, requires a long-term perspective.

The time frame used in three of the four inservice experiments was one school year. The experiment conducted by Good and Grouws extended over a four-month period. The discrepancy between the time frame in these experiments and those time frames recommended by curriculum implementation researchers may reflect differences of purpose. The primary purpose of the four experiments was to demonstrate the effects of inservice training on student achievement. In contrast, curriculum implementation is concerned with the institutionalization of an innovation as part of a school improvement effort. This purpose may well require a longer period of time to accommodate readiness activities, train all staff, and monitor and maintain training effects.

# D Organizational Context

Inservice education is fundamentally a learning experience that occurs for individual teachers. It is also the case that teachers are members of school organizations. Characteristics of these organizations may well influence the delivery of inservice education programs to teachers. The same characteristics may also influence the effects of the programs on teachers and their students. In this section we consider three characteristics of school organizations that are likely to influence inservice program effectiveness.

## 13 Purpose for Participation

This dimension was suggested by the discussion in Joyce and colleagues (1976) of the "modal system" in inservice education. The modal system refers to the organizational context in which inservice education occurs. Joyce and his colleagues identify five such contexts: the job-embedded mode (school committee work), the job-related mode (school district workshops outside of regular school hours), the credential-oriented mode (university certification courses), the mode of professional organization-related work (NEA workshops), and the self-directed mode (sabbatical leaves).

We prefer to think of these modes as representing different purposes for inservice education. Therefore, we distinguish four such purposes: first, inservice for personal professional development, which corresponds to the self-directed mode and perhaps to the professional organization mode; second, inservice for credentialling, which corresponds to the credential-oriented mode; third, inservice for the purpose of being inducted into the profession; and fourth, inservice for school improvement, which corresponds to the job-embedded and job-related modes.

The first three purposes relate to the development of the individual teacher. Inservice for school improvement, though, gives priority to the school organization. The teachers' personal needs may be taken into account, but their role as members of the school organization is critical to this form of inservice education. Campbell (1981) developed two separate models of inservice education based on this

distinction between the needs of the school system and the needs of the teacher. Miller and Wolf (1979) developed a cyclical staff development/school change model that reflects these two purposes of teacher education.

The four inservice experiments all focused on the individual teacher in the classroom. Teachers volunteered for the inservice programs; they were not recruited because they were members of a particular school staff. Also, the building principals and district curriculum specialists were not directly involved in the program, as they might have been if the program had been conducted for the purpose of school improvement.

Hutchins' ongoing study, described by Saily (1981), is testing basic skills programs for the purpose of school improvement. The program covers content similar to that covered in the four inservice experiments, but there are several important contextual differences. The most critical difference is in who receives the training: "The workshop series is generally conducted for a school district or group of schools within a district. Each participating school sends to the workshop a team of the principal and two or three teachers; a central office staff member is also involved" (p. 11). The workshops also cover training in standardized achievement testing to help educators increase the content validity of tests administered in their districts.

The Lawrence and Harrison (1980) meta-analysis indicated that the more effective inservice programs were designed as a collective effort of a school staff. Also, the more effective programs had shared goals rather than individual teacher goals. These results suggest that inservice for school improvement is generally more effective than inservice for personal professional development.

## 14 Inservice Cohorts

The available research on this dimension indicates that teachers have a strong preference for working with other teachers in their inservice activities rather than working by themselves. Lawrence and his colleagues (1974) concluded from their research review that inservice activities produced more positive effects on teachers when they provided mutual assistance in an inservice program than when they worked alone. Holly (1982) found in her survey of 110 teachers that

they most preferred inservice activities that allowed them to work with other teachers: "Teachers described their colleagues as valuable sources of practical ideas and information, helpful advisors on professional problems, the most useful evaluators of teaching skills, and understanding allies" (p. 418). Similarly, Ngaiyaye and Hanley (1978) surveyed 228 teachers and found that the teachers preferred inservice meetings organized for colleagues with similar teaching responsibilities.

We consider it worthwhile to distinguish at least three aspects of teacher grouping for an inservice activity: individually based versus group-based instruction, homogeneous versus heterogeneous grouping with respect to teaching responsibilities, and same-school versus different-school grouping. However, we could locate no evidence as to the relative effectiveness of variations in these groupings.

The four inservice experiments used a combination of individually based instruction (study of manuals) and group-based instruction (inservice meetings). Also, the four experiments included teachers at the same grade level. This feature of inservice group composition may be particularly relevant because it helps to increase the pertinence of the inservice activity to each teacher's classroom situation.

## 15 Concurrent Organizational Changes

As indicated above, one major purpose of inservice education is to bring about school improvement. If an inservice activity is used for this purpose, it would be informative to learn whether the activity is supported by other changes in the school system of which the teacher is a member.

The building principal is probably the most influential symbol of school organization for teachers. Loucks and Pratt (1979) concluded from their research that "what the principal does is critical to the success of an implementation effort" (p. 215). These critical role behaviors of the principal are commonly referred to as "instructional leadership." Leithwood and Montgomery (1982) reviewed the research on the role of the principal in school improvement and found that the more effective principals were more likely to participate in teachers' inservice activities. Participation included attending all or at least the early inservice sessions for

teachers.

Another type of organizational change relevant to inservice education is curriculum change. Inservice education is sometimes used to support implementation of a new curriculum. In turn, the new curriculum may include features that facilitate the teacher and student objectives of the inservice program. Examples of such features include teacher manuals that contain lesson plans based on direct instruction principles, curriculum-referenced tests, and learning activities that ensure high student success rate. We could locate no research on whether inservice is more or less effective when it accompanies curriculum revision.

# 16 Other Inservice Activities

The effects of a particular inservice program are possibly dependent on other inservice programs that the teacher experiences either concurrently or at some other point in time. These other programs may reinforce and build upon the objectives of a particular program by diffusing the teacher's attention across disconnected priority goals.

Research on how teachers' inservice experiences articulate with each other across a specified period is scarce. A few studies have addressed the related question of the quantity of inservice that teachers receive. Arends (1983) studied beginning high school teachers over a three-year period. His sample participated in a mean number of 10.5 inservice activities during the interval, for an average of 3.5 activities per year. The mean total number of inservice hours was 291 or 97 hours per year. In contrast, Schalock (1977) surveyed 450 teachers and found that they engaged in a mean number of 1.5 activities in the course of a year.

Two differences in the methods used by Arends and Schalock may explain their disparate estimates of inservice quantity. Arends used interviews and studied only beginning teachers. Schalock used questionnaires and studied teachers with a much wider range of teaching experience.

An interesting finding in Arends' study was a correlation of .67 between (a) the principal's rating of a teacher's competence at the end of the teacher's first inservice year and (b) the teacher's total number of inservice hours over the three-year period. This finding may

mean that participation in many inservice activities leads to improved teacher effectiveness, but an equally plausible interpretation is that a teacher's high involvement in inservice activities is seen by the principal as a sign of competence.

# E Governance

Governance involves a number of policy and management decisions that may influence the effects of inservice education on teachers and their students. Governance issues have been at the forefront of dialogue on inservice education in recent years. For example, the federally funded Teacher Centers were established on the premise that inservice education would be more effective if teachers controlled its design and governance. Below, we review the available research concerning various dimensions of inservice governance. The four inservice experiments are not informative about these dimensions because the decision to institute the experimental programs primarily reflected the researchers' initiatives rather than school system initiatives.

## 17 Governance Structure

This dimension is meant to represent the individual or group having responsibility for making key inservice policy decisions concerning the selection of inservice objectives and activities, incentives and sanctions, and the allocation of resources. Some school districts have governing boards to make these decisions. In other settings these decisions may be left to the building or district staff development specialist.

Inservice programs may be associated with several levels of governance. In some cases, an office of a state department of education may make the decision to mandate a certain type of training at the district level. In turn, a governance board at the school district level may assume the responsibility for the way this training will be designed and offered to district teachers. We could identify no research on whether variations in governance structures have an influence on the effectiveness of inservice programs.

## 18 Teacher Participation in Governance

As might be expected, surveys (Betz and others 1978, Holly 1982, Schurr and others 1980) typically find that teachers desire input into the planning of inservice programs. Inservice leaders such as Gehrke and Parker (1981) and Johnston and Yeakey (1977) also advocate collaborative planning among teachers and administrators to ensure successful implementation of an inservice program. Three prominent educators, Ryor, Shanker, and Sandefur (1979), concluded that "inservice programs imposed from the top down are doomed to failure" (p. 15). The Lawrence and Harrison (1980) meta-analysis revealed that inservice programs in which teachers chose at least some of the goals and activities were more effective than entirely preplanned programs for increasing teacher competence.

## 19 Recruitment of Participants

Participation in an inservice activity can be voluntary or required. There probably are degrees of participation between these two extremes. For instance, administrators may stop short of requiring participation but may use strong incentives or sanctions to ensure high participation rates. The critical element, then, is probably not whether the inservice activity is voluntary or mandatory but whether teachers feel coerced into participating. Even if a particular activity is required, teachers may not react negatively if they wish to participate.

The four inservice experiments involved volunteer samples of teachers. Voluntary participation seems reasonable if the purpose of the activity is to conduct a researcher-controlled experiment, as in the case of the four experiments, or to encourage the professional development of individual teachers. When the inservice education is used for the purpose of school improvement, however, mandatory participation may be more effective. School improvement may require the staff to make individual preferences and needs secondary to school goals.

We could locate no research data about the extent to which current inservice activities are voluntary or required.

One related finding in the Lawrence and Harrison (1980) meta-analysis was that mandatory versus voluntary participation of teachers did not predict inservice program effectiveness.

## 20 Incentives

A reasonable hypothesis is that incentives influence teachers' willingness to participate in an inservice activity and their satisfaction with the experience. We could not locate empirical tests of this hypothesis, however. Some descriptive data about inservice incentives were collected in the survey of teachers carried out by Betz and colleagues (1978). Teachers reported that "the most common and also the most preferred types of compensation included released time, expenses, credit for certificate level, and college credit" (p. 492). The Rand studies by Berman and McLaughlin (1978) revealed that teachers were unlikely to continue implementing a new curriculum or method without approval of the principal. The reports of the four inservice experiments do not specify what types of incentives, if any, were given to participating teachers.

## 21 Sanctions

In the discussion of participant recruitment (dimension 19), reference was made to the possible use of coercion to secure teacher participation in an inservice activity. The dimension of sanctions refers to the use of threats to secure teachers' agreement to participate in an activity, or to punish them for nonparticipation. An example of such a tactic is to require remedial supervision as a condition of continued employment. Another example is the nonrenewal of a teacher's certificate if a minimum number of credits are not earned within a given time limit. No research about the use of sanctions in staff development programs could be located.

## 22 Costs

There is surprisingly little information in the literature about the costs of particular inservice programs.

A survey of Oregon School districts several years ago (Schalock 1977) found that typically 3 to 5 percent of district budgets was allocated to inservice education. It is not known how much teachers pay on their own for inservice programs and whether such expenses affect how much teachers benefit from the programs.

# F Selection and Evaluation

The evaluation of inservice programs is not a well-developed field. Lawrence and Harrison (1980) began their meta-analysis of the inservice literature with a review of approximately 6,000 abstracts and references. Only 150 of these documents reported quantitative data, and only 59 of those contained sufficient data for inclusion in the meta-analysis. This suggests that systematic evaluation of inservice programs is the exception rather than the rule. One of the few efforts to conceptualize the parameters and purposes of inservice evaluation was made by Gall and others (1976). Gall and his colleagues sought to conceptualize the levels of impact that might result from an inservice program. Four such levels were proposed:

Level I --Implementing the inservice program. This level of impact refers to how well the program is conducted. A possible indicator of level I impact is the number of teachers who choose to participate in the program and the number of teachers who complete it.

Level II --Teacher improvement. This type of impact refers to the effects of the program on teacher competence.

Level III --Change in student performance. Many inservice programs have the goal of changing student performance by first changing teacher behavior (level II).

Level IV --Changes in the environment. Levels II and III of program impact might spread to other contexts. For instance, teachers who learn about a new instructional technique in an inservice program might informally teach it to their colleagues.

Each of these levels of impact can be the object of evaluation. We have included levels II and III as dimensions 26 and 27, respectively, because they are the most direct outcomes of inservice programs. Dimensions 23, 24, and 25 relate to the quality of the process by which a program is selected or developed for presentation to teachers.

# 23 Policy

This dimension refers to the rationale and evidence that decision-makers use to justify the use of inservice activities to achieve educational goals. Inservice education is just one option that can be used to implement policy. For example, if the goal is to improve students' basic skills achievement, administrators might consider these other options: reducing class size, hiring more teacher aides, or issuing directives to teachers to spend more time on basic skills instruction. Inservice education must compete with these options in the policy-making process.

A decision-maker's rationale for selecting the type of inservice activities used in the four inservice experiments probably would be that such activities are of demonstrated effectiveness in improving student achievement. There is evidence, though, that decision-makers may not be receptive to such research data on inservice effectiveness. Schalock (1977) found widespread concern among Oregon educators about the effectiveness of inservice programs as a method of improving educational practice. The problem is compounded by the fact that in some settings the work of staff development specialists is only loosely coupled to policy-making of school administrators. Vacca and others (1981) found that "no one identifying primarily with staff development claimed to experience intimate involvement in the decision-making process. Staff developers perceive themselves as middle managers with limited access and little power" (p. 51).

The most noteworthy feature of the four inservice experiments in this area is that teacher objectives are derived directly from correlational research linking teachers' instructional behaviors to student gains in basic skills achievement. This "rational" approach may be the exception rather than the rule. In their study of curriculum implementation, Berman and McLaughlin (1978) found that few school districts in their sample conducted a rational search for better ways to educate students. Edwards (1981), too, criticized staff development programs for being "a conglomeration of activities determined by decision making criteria such as cost or availability or strong advertising" (p. 2).

# 24 Needs Assessment

The training programs in the four inservice experiments were not selected as a result of a formal needs assessment process. The purpose of these experiments was to validate through controlled conditions the effectiveness of particular training programs rather than to respond to identified needs of school districts. In practice, though, school districts may initiate inservice programs for reasons other than demonstrated effectiveness.

The literature suggests that a formal needs assessment is the recommended process for identifying inservice objectives. Nuemann-Etienne and Todd (1976) and Powell (1980) have described models for developing a comprehensive inservice program for a school system. Both models rely heavily on such needs assessment techniques as site visitations to diagnose system needs, surveys of teacher concerns, and surveys of teacher priorities. Nelson (1981) reported that the Montgomery County School District in Maryland initiated an inservice program to support an instructional renewal process by first conducting an assessment of training needs for the district's teachers.

We were unable to identify any research on the prevalence of formal needs assessment to identify inservice objectives. It may be that inservice objectives and activities are selected by a much more informal, opportunistic process. A particular administrator may initiate an inservice program because an inservice trainer made a convincing presentation of its merits, because he or she heard about its success in another district, or because the school board identified a problem for which an inservice activity seemed an appropriate solution.

# 25 Relevance to Participants

Researchers have found that teachers generally evaluate the effectiveness of an inservice program by how relevant its content is to their particular classroom situation. Holly (1982) interviewed 100 K-12 teachers and concluded that "the

single most important factor determining the value teachers placed on an inservice education activity was its personal relevance" (p. 418). Similarly, Vacca and her colleagues (1981) found that teachers' major criterion in rating the effectiveness of staff development personnel was the relevancy of their message. Teachers preferred staff development specialists who gave them "ideas, strategies, and materials that relate directly to their own classrooms" (p. 51). It is disappointing, then, that the elementary teachers surveyed by Ogletree and Allen (1974) felt that their inservice meetings generally were irrelevant to their professional work.

Joyce and others (1976) reported that the teachers interviewed in the ISTE Concepts Project "were much less specific and clear about substance and process than any other aspect of the structure of ISTE" (p. 23). The investigators concluded that "the interviews, position papers, and literature all reveal an agreement that much of ISTE contains substance which is irrelevant to the needs of classroom teachers" (p. 23).

The training provided in the four inservice experiments was probably implemented in part because it was quite relevant to the classroom situations of the participating teachers. The instructional principles were derived from previous correlational research based on observations of teachers similar to those who participated in the experiments. In fact, in Stallings' experiment some of the teachers had also participated in the correlational study. Thus, the instructional principles were directly relevant to the teachers' classroom situations. The teaching behaviors reflected in the principles were already present to some degree in most teachers' repertoires. Inservice training consisted primarily of having teachers do either more or less of what they already were doing in their classrooms and of sequencing their activities appropriately.

The training in the four experiments was also relevant in that all the participating teachers in a particular experiment were at the same grade level. Thus, a question or problem raised by a teacher at a training meeting probably would be relevant to the other teachers as well.

## 26 Measurement of Teacher Competence

A major justification for inservice programs is that they produce desirable changes in teacher competence. Our

review of the literature revealed that this claim is rarely tested. Evaluation involving objective measurement of teacher competence is seldom included as a component of inservice programs for teachers. Measurement procedures can range from administering questionnaires and surveys to observing teachers' classroom behavior.

The four inservice experiments all involved direct observation of the teachers' classroom behavior before and after the inservice training process. The observation focused on the teachers' use of instructional behaviors that researchers had found to correlate with student achievement gains. The purpose of collecting the observational data was to determine whether the experimental inservice program was more effective than a no-training condition.

Measurement of gains in teacher competence requires resource expenditures by the agency sponsoring the inservice program. We could identify no research on whether policy-makers find utility in measurement data on teacher competence, nor could we locate any studies on the relative benefits of collecting teacher competence data and student achievement data for evaluating inservice projects.

## 27 Measurement of Student Objectives

The technology to measure most student objectives of inservice programs is available to educators. Whether administrators choose to measure the objectives, and for what purpose, are matters of policy. In the four inservice experiments, the student objectives were basic skills gained in reading and math. These skills were measured in each study by standardized achievement tests. The test data were used to assess the effects of the inservice programs that comprised the experimental treatments in these studies. Reinstein (1976) noted other useful purposes that could be served by such achievement tests: they can help to determine allocations of resources to alleviate weakness in instructional programs and to assess whether students are acquiring minimum competencies as they progress through school.

Although standardized achievement tests are useful in certain circumstances, they are also problematic. Saily (1981) referred to a recent study at the Institute for Research on Teaching at Michigan State University. This study indicated that 30 to 40 percent of the items in standardized

tests are not covered by commercial textbooks at the same grade level. Because teachers rely heavily on these textbooks to determine their classroom instructional content, there is probably a weak match between what teachers teach and what standardized tests measure. Thus, the test results may have low validity for measuring the objectives of some inservice programs. If teachers attempt to "teach to the test," they may need to deviate substantially from their textbooks and devote extra effort to improving the match between their instructional content and the test content. This extra effort may arouse resentment in teachers and resistance to school system efforts to promote basic skills achievement.

Another potential problem of standardized tests is that they may be used to evaluate teachers and to make them the prime targets of accountability for student progress. Edwards (1981) reported that "apprehensiveness of teachers about the process of evaluation, their distrust of the accountability movement, and their fearfulness of becoming scapegoats for the failure of innovations" (p. 1) is widespread.

# Case Studies

Educational administrators and teachers alike are well aware of the difficulties involved in transferring theory into practice, but generally they recognize the essential relationship between the two. Most educators who achieve success in their efforts to improve the quality of their schools do so because they possess among their talents the ability to think carefully about potential difficulties, plan for them, and eliminate problems before they occur. This is the central role that theory can play for educators. It can give them the tools and ideas necessary for constructing rational, well-developed procedures, and it can assist them in implementing their plans effectively.

Schools and school districts, because they are made up of individuals, take on the characteristics of those individuals. Thus, each one is unique. Yet, paradoxically, each can also be representative of others. The school district staff development programs described below are meant to demonstrate both roles. These programs might be representative because they are large, medium, or small in size. Also, each of them, like most school districts across the nation, has suffered from budget constraints yet is achieving some measure of success. Still, each is an individual school district with characteristics all its own.

Location of all three programs in one state resulted simply from our need for a convenient means of identifying programs. Appreciation is due the Association of California School Administrators for responding to our request for a list of school districts operating exemplary staff development programs.

As the following descriptions reveal, much thought has gone into the design, implementation, and evaluation of these inservice programs. If anything, the descriptions do not do justice to the complexity of the programs and the energy invested in them.

Dimensions described in the previous section that are related to specific aspects of the programs are not mentioned by name, but they can be easily recognized. Also, although the use of theory probably contributed greatly to the success of each program, that alone was not enough. All the administrators interviewed communicated the qualities of

enthusiasm, optimism, patience, and commitment. As we study theory in our attempts to improve the quality of education, perhaps we should pause to consider how these personal qualities can also contribute to our efforts for success.

## 1 Whittier Union High School District

Jerry Haines is director of staff development for the Whittier Union High School District in Whittier, California. In this position, he oversees the inservice programs for about 350 teachers from six high schools with a total enrollment of almost 10,000 students. The district offers a variety of inservice topics in specific areas, including programs for teachers of gifted students, curriculum-specific programs, and writing workshops. But the centerpiece of the district's staff development efforts is the "Teacher Power Program" designed by inservice education personnel for the overall purpose of improving teachers' basic teaching skills.

The program combines clinical teaching techniques, elements of Dr. Arthur Costa's "Enabling Behaviors" program, and other inservice methods into four days of workshop activities meant to help teachers in three specific areas. The first area involves analysis of classroom teaching styles and student learning styles. The second component provides teachers with a five-step lesson design, which concentrates on specific behavioral objectives and on methods for eliciting more active classroom participation from students. The third component seeks to bring about higher levels of questioning by teachers in order to achieve higher levels of thinking on the part of students. Haines believes the program encourages "Responsive Behaviors on the part of the teacher, clear classroom planning, and a higher level of questioning skills. All these procedures," Haines says, "build success in students and a more positive atmosphere."

The "positive atmosphere" Haines describes is related to the districtwide objectives of all inservice activities. He believes individual improvement and school improvement are integrally related; in fact, they are inseparable. "We work with the individual," he says, "but we are doing it at such a broad level that it influences the whole school. Your purpose is the total--but you work through individuals."

Program design includes input from a committee of teachers and administrators. The district has three inservice days per year for each school, so some of the

inservice activities are planned for those days, though other activities occur after school and on weekends. Substitutes are often used, so teachers can have some flexibility in scheduling. The inservice staff includes two teacher trainers to assist in the delivery of the Teacher Power Program and other inservice offerings. A letter explaining the purpose and scheduling for the programs is sent to all participants. Also, a short orientation meeting is held before the actual workshops begin, and the Myer-Briggs Personality Inventory is administered as part of the readiness activities.

Recognizing the need for consistency between program objectives and evaluation methods, Haines reports that the district redesigned its evaluation procedures so that the criteria for evaluation helped to measure more accurately the attainment of staff development goals. He emphasizes the importance of including staff development in the overall program of teacher evaluation:

> The process of evaluation includes a preassessment and sets up a professional development plan. Within the plan, inservice is planned or prescribed by an administrator or requested by the teacher for updating skills or getting new kinds of skills, for example, skills related to curriculum content or writing. We assess at the beginning of the year what the teacher's needs are, provide the inservice to meet those needs, and then the teacher is finally evaluated at the end of the year to analyze the fulfillment of the professional development plan.

The district seeks to implement inservice on a voluntary basis. "As administrators," Haines says, "we try to get the teacher to choose the programs. The more the teacher chooses, the stronger the program. But we also have the responsibility to make sure the teachers are working at a proper level."

The thoroughness in planning, implementing, and evaluating the district's staff development programs seems to derive from Haines' general philosophy on what makes inservice programs effective:

> The key thing is getting a district to set up a system. We now have a system in which administrators have been trained in supervision and the same instructional techniques as the teachers. It is important to train the administrators first, then the teachers, and then set up an ongoing system to support and monitor the

usage of the instructional techniques. The system is the key. My observations have been that where there is no system, staff development is ineffective.

## 2 San Diego Unified School District

Two years ago, the San Diego Unified School District reorganized its staff development program. Mary Hopper, director of staff development and training, is now responsible for that district's inservice activities for teachers of over 112,000 students in 180 schools. To overcome the difficulties of providing staff development and training programs for over 5,000 teachers and the additional difficulties of limited substitute teacher availability and absence of scheduled inservice days, Hopper takes a systematic yet imaginative, incentive-based approach.

The district has devised an inservice course method. "We offer 15-hour courses on a districtwide basis," Hopper explains. "Teachers can take salary credit for completing courses--1 unit of salary credit for taking a 15-hour course." Although this program is of necessity voluntary, inservice related to implementation of curriculum materials is occasionally required of some teachers.

The voluntary courses are advertised through the district's quarterly newsletter and are usually scheduled from 4 to 6 p.m. once or twice a week, or on weekends, to accumulate 15 hours of instruction time. Hopper's staff of one coordinator and five resource teachers are assigned to a given area including a number of different schools. The staff assists in delivering and evaluating the success of an extensive array of topical inservice activities for elementary and secondary teachers. To determine the inservice needs for such a wide range of teachers, several methods are used. "We've done a formal needs assessment districtwide. We also use surveys and telephone followups," Hopper says.

Occasionally, individual schools within the district ask for inservice assistance. "When we work with a school site," Hopper notes, "we visit the site for needs assessment." Once a school's needs are identified, a resource teacher meets with the school staff to explain the program and field questions. "We'll meet with the staff in any way they feel will help them with the program," she says. "For example, a secondary school site sometimes will ask that the resource

teacher meet with every department or with the full faculty." Materials related to the selected program are often given out at these meetings. In the case of school sites, scheduling of the activities is usually left up to the school staff.

The problems related to gathering evaluation data on programs are obvious. Gains on student achievement scores are not used as a basis for judging program success, but posttraining surveys and followups are employed. The newsletter containing course schedules also offers teachers the opportunity to evaluate programs on a write-in basis.

Like Haines, Hopper reports that inservice programs are designed in a variety of ways. Some are chosen on the basis of research that validates their value; others are chosen because of their successful implementation elsewhere; and often the district's inservice staff will design their own programs. Teacher and management representatives from the different areas within the district form a Staff Development Advisory Committee, which provides input from the various levels of the district's organization.

As in most school districts, budget limitations and time constraints are her most difficult administrative challenge, Hopper says. Yet the San Diego School District's Staff Development and Training Department has managed to organize and implement an impressive staff development program for an extremely large group of professionals. Her assessment of the overall objectives of the district's staff development approach includes both the individual and the organization: "I'd say that we're looking at the total picture, and approaching it in a number of different ways."

## 3 Redwood City Elementary School District

A review of the staff development program in the Redwood City Elementary School District provides a good opportunity to look at the various components an administrator considers when designing new inservice programs for implementation. Bob Beuthel, deputy superintendent, oversees the staff development efforts for 240 teachers at 14 elementary schools (K-8).

The district's highest priority, in recent years, has been to develop a bilingual education program because roughly one-third of the district's 6,500 students have limited English-speaking ability. Despite the budget-reducing

effects of Proposition 13 and declining enrollment, the district managed to design and begin implementation of the bilingual program. With that accomplished, Beuthel has now turned his attention to the process of developing a comprehensive approach to staff development after several years of using a "shotgun" approach.

Beuthel began by transferring Connie Williams, previously director of bilingual education, to the position of director of staff development. Beuthel was able to hire two full-time and one part-time resource teachers to assist with the inservice education program.

Several programs are in the design or early implementation stages. The district is working on a five-year plan involving the use of microcomputers; part of the plan includes inservice programs related to helping teachers acquire new skills and techniques for computer use. Another program, funded by a grant from the Packard Foundation, will seek to retrain seventh- and eighth-grade math teachers, who, due to staff changes, are teaching math despite it not being their original area of specialty. Beuthel expects this training program to "bring these teachers' skills up to a level that gives them a great deal more confidence and capability in math instruction." Implementation of the bilingual program is a third area that involves substantial inservice activity.

A fourth area concerns curriculum implementation. Inservice in this area relates to what Beuthel calls a "cycle concept," which seeks to evaluate, adopt, and implement new textbooks into curriculum in a three-year cycle. After a two-year period of evaluation and adoption procedures, the third year will use inservice training as a part of the textbook implementation process.

Much emphasis in the coming years will be given to a new program being developed by the inservice education staff. Called the "Effective Teaching Program," this inservice activity will be delivered as a thirty-hour course spread over several days. The classroom will be used as a training site for part of the scheduled time. Like the Teacher Power Program in the Whittier School District, the Effective Teacher Program is derived from different components of several effective teaching models.

The justification and objectives for the program have been made clear in advance: "All teachers need to be introduced to or reinforced in the principles of effective teaching. The Effective Teaching Program has been designed

to meet these needs." The objective is "to enhance the quality of instruction in the Redwood City School District" by providing "training in the effective teaching model and...continuing support for the effective teaching participants."

One of the most interesting features in the design of this program is the thoroughness with which the plan is conceived. A team approach to the concept will be emphasized. Beuthel, who describes his role in the project as "a support agent, a catalyst, and a provider of direction for the team," says that a committee composed of staff development personnel, early retirees, and teacher representatives from each school will provide input to virtually every part of the process. Various other district committees will also review the proposal. This process is intended to build districtwide support before implementation begins. Beuthel hopes that the original committee members will be early trainees in the program; they could then serve as valuable resource persons for subsequent participants.

Although final decisions on several aspects of the program have not yet been made, a list of representative considerations includes cost, suitability of content, trainee preference, and methods for minimizing interference in the teacher's instructional program. Beuthel expects an extensive evaluation process to occur; some possible evaluation techniques include pre- and post-test evaluation, observations, longitudinal studies, and the opportunity for followup assistance after the training program is completed.

Beuthel sees this last area especially useful as a measure of program success. "If we're really successful," he says, "the requests for followup assistance will be greater. We want the program to be something that people regard as a positive experience." He also hopes that a support group system will form after the 30-hour program is completed so that the staff development will be an ongoing process rather than a limited one.

Much of Beuthel's confidence in the program's potential for success is based on the early support given to it by the district staff, both as individuals and as a group. Says Beuthel: "We've got the people, we've got the network, we've got the desire on the part of the participants to be involved in staff development activities, and we've got the support of our board and administration, so I see nowhere to go but up."

# Appendices

## A Review of Research on Basic Skills Instruction at the Elementary School Level

To derive a set of dimensions for characterizing inservice programs, we reviewed research on basic skills instruction at the elementary school level. Several sources provided useful information related to the dimensions included in our model. The reader is directed to the original reports (cited in the bibliography) for complete information on the relevant research.

The systems framework developed by the Inservice Teacher Education (ISTE) Concepts Project provided a useful starting point for creating our set of dimensions. Joyce and colleagues (1976) describe the ISTE Project and report that "there are four major dimensions that take the form of systems that link together to form the structure which is ISTE" (p. 3). These four systems are the substantive system, the delivery system, the modal system, and the governance system. We derived some of the dimensions in our model from these systems within the ISTE structure.

Another source for identifying inservice dimensions was the research on curriculum implementation. Fullan and Pomfret (1977) review the research on implementation; we have included as dimensions in our model several items from their list of determinants for effective implementation.

We derived additional dimensions from the literature on general inservice education. For example, Pankratz and Martray (1981) and Nelson (1981) describe models for using inservice education to support the development and installation of new instructional programs. These models suggested several dimensions, such as the use of needs assessment and the relevance of content, that we added to our list.

Cruickshank and colleagues (1979) suggested that the model developed by Dunkin and Biddle (1974) for conceptualizing research on teaching could be used to identify and organize inservice education variables. Some of the variables identified in these reports are included as dimensions in the Delivery System, Teacher Objective, and Student Objective categories in our model.

Finally, the literature on "loose coupling," described by Meyer (1981), suggested the need for identifying dimensions that reflect the relationship between inservice education and school organization arrangements for conducting administrative and technical functions. "Tightly coupled" inservice programs posit a rational, close connection between means (inservice training) and ends (student achievement). However, the theory of loose coupling as it applies to school organization suggests that inservice education would be poorly linked, or loosely coupled. to student achievement goals and to other aspects of school organization. Thus, we added a set of dimensions to our Selection and Evaluation section to characterize whether particular inservice programs are tightly or loosely coupled to school outcomes and needs.

## B Verification of the Dimensions by Four Inservice Experiments

We reviewed the literature on inservice programs for basic skills instruction to identify practices corresponding to the dimensions that have been found to contribute to making such inservice programs effective. For example, we were interested in identifying any research that determined whether the presence of readiness activities (dimension 7 in our model) contributed to the effectiveness of an inservice program.

Four inservice experiments were especially useful for identifying such practices--three on basic reading skills instruction (Stallings 1980, Anderson and others 1979, and Gage and others 1978) and one in mathematics (Good and Grouws 1979). These experiments are referred to collectively throughout this report as "the four inservice experiments."

In each of the four inservice experiments, the content of the inservice program was a set of instructional techniques that previous research had found to be correlated with measures of student achievement. The instructional techniques used in the four inservice experiments have generally come to be known as "direct instruction." Rosenshine (1976) has identified the research for and the essential elements of direct instruction.

All the programs tested in the four inservice experiments were effective in improving students' basic skills achievement. The results are sufficiently consistent and potent such that educators need to think about

incorporating the experimental inservice programs in practice. Since our review, some additional experiments, yielding similar results, have been reported, for example, Gage (1984) and Gall and others (1984).

## Instructional Processes Used in the Four Inservice Experiments

1. Anderson, Evertson, and Brophy (1979)

   The project staff met with teachers to discuss the study. Teachers then read a 33-page manual describing 22 research-validated principles of reading group instruction and took a short quiz on it. Teachers met once again with the project staff to discuss the manual. One subgroup of these teachers was observed for their implementation of the principles throughout the school year. Another subgroup was not observed. (The two trained groups did not differ from each other in the end-of-year student achievement.)

2. Gage and others (1978)

   The "minimal" training group received a training manual and one self-administered test per week for five weeks. The "maximal" group received the same manuals and tests and also attended a two-hour meeting with the project staff each week. In these meetings the teachers discussed, practiced, and studied the techniques; they engaged in role-playing exercises; and they viewed videotapes of a "model" teacher performing the behaviors.

3. Good and Grouws (1979)

   Teachers attended an introductory 90-minute meeting and then read a 45-page manual of research-validated principles of mathematics instruction. Two weeks later the teachers attended another 90-minute meeting in which project staff responded to their questions and concerns.

4. Stallings (1980)

   Each teacher was observed for three days and then given a quantitative summary of the observations as feedback to help change his or her instruction to conform to research-validated specifications. Teachers also attended four two-hour workshops over a 90-day period.

# Bibliography

Many of the items in this bibliography are indexed in ERIC's monthly catalogs Resources in Education (RIE) and Current Index to Journals in Education (CIJE). Reports in RIE are indicated by an "ED" number; journal articles in CIJE are indicated by an "EJ" number.

Most items with an ED number are available from the ERIC Document Reproduction Service (EDRS), 3900 Wheeler Avenue, Alexandria, Virginia 22304. To order from EDRS, specify the ED number, type of reproduction desired--microfiche (MF) or paper copy (PC), and number of copies. Add postage, figured at the current rates, to the cost of all orders and include check or money order payable to EDRS. ED numbers not yet assigned are available from the Clearinghouse.


Anderson, L.M.; Evertson, C.M.; and Brophy, J.E. "An Experimental Study of Effective Teaching in First-Grade Teaching Groups." The Elementary School Journal, 79 (1979), pp. 193-223. EJ 201 788.

Arends, R. "Beginning Teachers as Learners." Journal of Educational Change, 76 (1983), pp. 235-42. EJ 280 233.

Berman, P., and McLaughlin, M.W. Federal Programs Supporting Educational Change. Vol. VIII. Implementing and Sustaining Innovations. Santa Monica, California: Rand Corporation, 1978. 58 pgs. EDRS. Specify ED 159 289. MF $0.97. PC $3.90.

Betz, L.; Jensen, R.; and Zigarni, L. "South Dakota Teachers View Inservice Education." Phi Delta Kappan, 59 (1978), pp. 491-93. EJ 173 536.

Borg, W.R. "The Minicourse as a Vehicle for Changing Teacher Behavior." Journal of Educational Psychology, 63 (1973), pp. 572-79. EJ 067 597.

Brophy, J.E., and Good, T.L. Teacher-Student Relationships: Causes and Consequences. New York: Holt, Rinehart, and Winston, 1974.

Campbell, R.J. "Knowledge, Control and Inservice Education and Training for Teachers." British Journal of Teacher

Education, 7 (1981), pp. 149-63.

Cawelti, G. "Improving the Productivity of Schools." ASCD Update, 23 (1981), p. 2.

Cruickshank, D.R.; Lorish, C.; and Thompson, L. "What We Think We Know about Inservice Education." Journal of Teacher Education, 30 (1979), pp. 27-32. EJ 205 559.

Dunkin, M.J., and Biddle, B.J. The Study of Teaching. New York: Holt, Rinehart, and Winston, 1974.

Edwards, S. Changing Teacher Practice: A Synthesis of Relevant Research. Austin, Texas: Teacher Education, University of Texas, 1981. 39 pgs. EDRS. Specify ED 223 566. MF $0.97. PC $3.90.

Fullan, M., and Pomfret, A. "Research on Curriculum and Instruction Implementation." Review of Educational Research, 47 (1977), pp. 335-97. EJ 166 914.

Gage, N.L. "What Do We Know about Teaching Effectiveness?" Phi Beta Kappan, 66 (1984), pp. 87-93.

Gage, N.L., and others. An Experiment on Teacher Effectiveness and Parent-Assisted Instruction in the Third Grade. Stanford, California: Center for Educational Research at Stanford, Stanford University, 1978. 196 pgs. EDRS. Specify ED 160 648. MF $97. PC $15.20.

Gall, M.D., and others. Involving the Principal in Teachers' Staff Development: Effects on the Quality of Mathematics Instruction in Elementary Schools. Eugene, Oregon: Center for Educational Policy and Management, 1984. ED number not yet available.

Gall, M.D., and others. "Teacher Training Programs: Levels of Impact." Inservice, (September 1976), pp. 2-9. (A publication of the National Council of States on Inservice Education, Syracuse University.)

Gehrke, N.J., and Parker, W.C. "A Longitudinal Study of the Process of Planning and Implementing an Instructional Improvement Inservice Program." Paper presented at the meeting of the American Educational Research Association, Los Angeles, April 1981. 15 pgs. EDRS. Specify ED 201 611. MF $0.97. PC $2.15.

Gersten, R.; Carnine, D.; and Williams, P. "Measuring

Implementation of a Structured Educational Model in an Urban School District: An Observational Approach." Educational Evaluation and Policy Analysis, 4 (1982), pp. 67-79.

Good, T.L., and Grouws, D.A. "Teaching Effects: A Process-Product Study in Fourth Grade Mathematics Classrooms." Journal of Teacher Education, 28 (1977), pp. 49-54. EJ 165 091.

Good, T.L., and Grouws, D.A. "The Missouri Mathematics Effectiveness Project: An Experimental Study in Fourth Grade Classrooms." Journal of Educational Psychology, 171 (1979), pp. 355-62. EJ 208 799.

Hall, G.E., and Loucks, S.F. Program Definition and Adaptation: Implications for Inservice. Austin, Texas: Research and Development Center for Teacher Education, University of Texas, 1980.

Harootunian, B., and Yarger, G.P. Teachers' Conceptions of Their Own Success. Washington, D.C.: ERIC Clearinghouse on Teacher Education, 1981. 28 pgs. EDRS. Specify ED 200 518. MF $0.97. PC $3.90.

Holly, M.L. "Teachers' Views on Inservice Training." Phi Delta Kappan, 63 (1982), pp. 417-18. EJ 259 452.

Johnson, J.L., and Sloat, K.C. "Teacher Training Effects: Real or Illusory?" Psychology in the Schools, 17 (1980), pp. 109-15. EJ 217 304.

Johnston, G.S., and Yeakey, C.C. "Administrators' and Teachers' Preferences for Staff Development." Planning and Changing, 8 (1977), pp. 230-38. EJ 175 621.

Joyce, B.R.; Howey, K.; and Yarger, S. ISTE Report I. Palo Alto, California: Stanford Center for Research and Development in Teaching, 1976.

Joyce, B., and Showers B. "The Coaching of Teaching." Educational Leadership, 40 (1982), pp. 4-10. EJ 269 889.

Lawrence, G., and Harrison, D. Policy Implications of the Research on the Professional Development of Education Personnel: An Analysis of Fifty-Nine Studies. Washington, D.C.: Feistritzer Publications, 1980.

Lawrence, G., and others. Patterns of Effective Inservice

Education. Tallahassee, Florida: Department of Education, 1974.

Leithwood, K.A., and Montgomery, D.J. "The Role of the Elementary School Principal in Program Improvement." Review of Educational Research, 52 (1982), pp. 309-39. EJ 273 682.

Loucks, S., and Pratt, H. "A Concerns-Based Approach to Curriculum Change." Educational Leadership, 37 (1979), pp. 212-15. EJ 212 351.

McDonald, F.J. "The Teaching Internship and Teacher Induction." Paper presented at the 52nd Annual Convention of the National Association of State Directors of Teacher Education and Certification, Boston, June 1980.

Meyer, J.W. "They Also Serve: Organizations as Ideological Systems." Draft paper prepared for the Conference on Administrative Leadership, Urbana-Champaign, Illinois, July 1981.

Miller, L., and Wolf, T.E. "Staff Development for School Change." In Staff Development: New Demands, New Realities, New Perspectives, edited by A. Lieberman and L. Miller. New York: Teachers College, Columbia University, 1979.

Miller, S.K. "Changing the School Learning Climate: Overcoming Resistance to Change." In The Generator: The Social Context of Education. Milwaukee: Division H, American Educational Research Association, 1981.

Naumann-Etienne, M., and Todd, J.W. "Applying Organizational Development Techniques to Inservice Education." Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, April 1976. 23 pgs. EDRS. Specify ED 122 357. MF $0.97. PC $2.15.

Nelson, M.E. Inservice Training for Curricular Change: Focus on Delivery of Integrated Training for Principals, Teachers and Paraprofessionals. University of Maryland, 1981. 21 pgs. EDRS. Specify ED 195 535. MF $0.97. PC $2.15.

Ngaiyaye, M.S.W., and Hanley, J.L. "What Teachers Want from Inservice Education." North Central Association

Quarterly, 53 (1978), pp. 305-11. EJ 194 672.

Ogletree, E.J., and Allen, B.J. Urban Teachers Evaluate Inservice Meetings. University of Illinois, 1974. 13 pgs. EDRS. Specify ED 183 645. MF only, $0.97.

Pankratz, R., and Martray, C. "A Collaborative Involvement Strategy for Educational Improvement." Paper presented at the Annual Convention of the Association of Teacher Educators, Dallas, February 1981. 7 pgs. EDRS. Specify ED 200 576. MF $0.97. PC $2.15.

Porter, A. "Curriculum Content Influenced by Many Factors." IRT Communication Quarterly, 4 (Fall 1981), p. 2. (A publication of the Institute for Research on Teaching, Michigan State University.)

Powell, G. "Developing an Effective Inservice Program." Paper presented at the Annual Meeting of the Plains Regional Conference of the International Reading Association, September 1980. 10 pgs. EDRS. Specify ED 197 329. MF $0.97. PC $2.15.

Prowat, R., and Anderson, L. "Affect Stressed over Cognition." IRT Communication Quarterly, 4 (Fall 1981), p. 2. (A publication of the Institute for Research on Teaching, Michigan State University.)

Reinstein, B.J. "Public School Perspectives on the Uses of Larger Scale Testing Programs." Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, April 1976. 12 pgs. EDRS. Specify ED 124 599. MF $0.97. PC $2.15.

Roehler, L., and Duffy, G.G. "Classroom Teaching Is More Than Opportunity to Learn." Journal of Teacher Education, 32 (1981), pp. 7-11. EJ 258 722.

Rosenshine, B. "Classroom Instruction." In The Psychology of Teaching Methods: The 75th Yearbook of the National Society for the Study of Education, Part I, edited by N.L. Gage. Chicago: University of Chicago Press, 1976.

Rouk, U. "School District's Policy Cultivates Student Growth." Educational R & D Report, 4 (1981), pp. 6-10.

Ryor, J.; Shanker, A.; and Sandefur, J.T. "Three Perspectives on Inservice Education." Journal of Teacher Education. 30 (1979), pp. 13-19. EJ 205 555.

Saily, M. "Free the Teacher." Educational R & D Report, 4 (1981), pp. 8-12.

Savage, D. "The Unanticipated Impact of Proposition 13." Educational Leadership, 39 (1982), pp. 250-51. EJ 257 896.

Schalock, D. (Project Director). "A Summary of Findings from Research on the Continued Professional Development of School Personnel in Oregon." Unpublished report prepared by a Profession Wide Study Group on the Continued Professional Development of School Personnel in Oregon, 1977.

Schurr, K.T., and others. "Discrepancies in Teacher and Administrator Preferences for Inservice Training Topics." Paper presented at the Annual Meeting of the American Educational Research Association, Boston, April 1980. 35 pgs. EDRS. Specify ED 186 401. MF $0.97. PC 3.90.

Stallings, J. "Allocated Academic Learning Time Revisited, or Beyond Time on Task." Educational Researcher, 9 (1980), pp. 11-16.

Sullivan, R. "City's Teacher Training Program Criticized in 1977-78 State Audit." New York Times, 26 January 1981, II, pp. 4-5.

Vacca, J.L.; Barnett, L.J.; and Vacca, R.T. Establishing Criteria for Staff Development Personnel. Final report submitted to the National Institute of Education, 1981. (Contract No. 400-79-0053).

Weick, K. "Educational Organizations as Loosely Coupled Systems." Administrative Science Quarterly, 21 (1976), pp. 1-19. EJ 134 531.

# Interviews

Beuthel, Bob, Deputy Superintendent, Redwood City Elementary School District, Redwood City, California. Telephone interview, November 30, 1984.

Haines, Jerry, Director of Staff Development, Whittier Union High School District, Whittier, California. Telephone interview, November 21, 1984.

Hopper, Mary, Director of Staff Development and Training, San Diego Unified School District, San Diego, California. Telephone interview, December 3, 1984.